Appendix A

CONTAMINATION-AVOIDANCE TACTICS, TECHNIQUES, AND PROCEDURES

1. Background

This appendix addresses preparedness (i.e., understanding the IMS) and response measures such as detection, marking, and contamination control that could support a possible military response to an NBC incident.

2. Preparedness

During peacetime, units and installations undertake measures (i.e., contamination-avoidance measures, drills and exercises to support crisis-management and CM preparation) to decrease vulnerability. This is part of an integrated approach to an overall unit/installation AT/FP program/plan; a key element in developing an integrated AT/FP plan includes understanding the civilian IMS and being aware of where and how the IMS process may influence response actions by military units.

a. Key information about the IMS's command and staff structure (i.e., incident commander; operations, plans, logistics, and administration sections; IC special officers; and safety, liaison, and PA) is important as a preparedness measure in understanding the responsibilities and functions at an incident site.

(1) Incident Commander. The incident commander is responsible for managing incident operations. His decisions (i.e., establishing a protection level) can directly impact military response elements. His directives support accomplishing major tasks such as—

- Establishing control of the incident scene.
- Ensuring the safe approach and positioning of emergency-response resources.
- Establishing staging as a method of controlling arriving resources.
- Establishing a security perimeter.
- Establishing hazard-control zones to ensure a safe work area. Factors that influence the size of hazard-control areas and the establishment of protective levels include considering whether an oxygen-deficient atmosphere exists (i.e., an atmosphere immediately dangerous to life and health [IDLH] contains 19.5 percent oxygen or lower); flammability (i.e., if dealing with an open-air release, the initial action level can be 20 percent of the lower explosive limit); radioactivity; and toxicity (i.e., guidance may indicate to use an estimated IDLH of 10 times the threshold-limit value/time-weighted average if there is no published IDLH or to use IDLH or short-term exposure-limit values).

- Assessing the need for immediate rescue and implementing public protective actions.

(2) Operations Section. The operations section manages and controls all on-scene tactical operations. This control will generally include the responsibility for supervising HAZMAT branch operations. Specific HAZMAT branch-related tasks can directly impact the where and when of military unit support. Functions can include the following:

- Site-control operations. Establish control zones and monitor access routes at the incident site.

- Decontamination operations. Develop, setup, and operate a decontamination area.

- Entry operations. Perform entry and backup operations within the hot zone to include reconnaissance, monitoring, sampling, and mitigation.

- Medical operations. Perform preentry and postentry medical monitoring and evaluation of all entry personnel and provide technical medical guidance.

(3) Plans Section. The plans section is a critical element for support of the IMS process. An effective flow of information is critical at an incident site for all parties. Responsibilities include—

- Collecting, evaluating, and disseminating incident information.

- Maintaining information on the current and forecasted situation.

- Maintaining information on the status of resources assigned to an incident.

- Preparing and documenting action plans.

(4) Logistics Section. The logistics section is another critical coordination point for military units. Military units may rely on local resources for site-support services, and the logistics section may coordinate service, communications, food, and facility support.

(5) Administration/Finance Section. The administration/finance section supports the IMS process by getting funds where they are needed and ensuring that financial controls are in place.

(6) Command and Staff Officers. The following officers are appointed by and report directly to the incident commander. These include the safety officer, liaison officer, and public information officer. Supporting military units must also understand the roles and responsibilities of these personnel to help ensure effective and efficient communications.

- Safety Officer. The safety officer is responsible for monitoring and assessing safety hazards and unsafe situations and developing measures for ensuring personnel safety. Assistant safety officers, such as the HAZMAT safety officer, may also be designated and have the authority to stop any activity that poses an imminent danger.

- Liaison Officer. The liaison officer serves as a coordination point between the incident commander and any assisting or coordinating agencies not involved in the UC structure that have responded to the emergency. The liaison officer is the point of contact for all assisting and coordinating external representatives who are not represented within the UC structure.

- Public Information Officer. The public information officer coordinates all media contact and activities during an emergency, assembles and prepares all news information and press releases, and establishes communications with all representatives and agencies.

b. Other preparedness actions can take many forms. Possible measures could include:

(1) Conduct of NBC threat-vulnerability assessment.

(2) Integration of efforts with other USG agencies, including applicable law enforcement and intelligence organizations. Commanders also assess the criticality of key infrastructure essential to functions such as staging and deploying operations.

(3) Coordination of commanders with civilian authorities and agencies to ensure that applicable measures such as Mutual Aid Agreements are in place to ensure a fully coordinated response.

(4) Actions to further reduce vulnerability may include—

- Enforcing operational security.

- Maintaining emergency NBC-response plans.

- Identifying FP capabilities and capability redundancy.

- Monitoring and analyzing public health information.

- Maintaining NBC defense equipment, to include medical supplies.

- Conducting joint and interagency planning (i.e., coordinating with FEMA and DOS).

- Assessing response elements' (active and reserve) certification for crisis-management or CM operations.

c. Constraints that confront overall preparation include the following:

(1) Military operating base and civilian community (foreign and/or domestic) populations often lack the training and equipment necessary to survive should an incident occur. First-responder elements (i.e., medical, law enforcement, fire fighters, HAZMAT, emergency planners, etc.) require training to ensure they do not become casualties when responding to an incident. Responder elements need the required level of realistic, integrated training (awareness, HAZMAT technician, etc.) to protect themselves so that they are able to contain an incident. For example, awareness-level first responders need an individual protection capability, and HAZMAT response teams need an immediate response capability to be able to conduct actions such as saving lives. Tactical plans on how to deal with these challenges also need to be developed and exercised.

(2) Much of the infrastructure that is a potential target is not hardened. Most of the structures in key facilities are not designed to withstand blast damage or the pervasive nature of a lethal CB-agent aerosol cloud.

3. Response Measures

Response measures include those actions needed to detect, assess, and contain an incident. These actions help avoid, control, or mitigate NBC hazards.

a. Detection. Detection includes both preincident defensive actions and incident actions. Preincident measures could include defensive measures taken by an installation to help reduce the probability of an incident. Detection primarily involves incident-related actions. Initial response begins with incident reporting by an observer and provides the commander/incident commander with information on contamination hazards and clean areas. Responders should be aware that standard military NBC detection equipment will not detect the presence of many toxic agents. Reliance on reported information and visual indicators (both positive and negative) from the site may be the sole indication that a toxic environment exists.

b. Assessment. Assessment is a continuing process throughout any incident. The situation must be quickly evaluated to determine the response objectives based on available incident-response capability. Information such as the type of incident, probable size of the affected area, and physical or environmental conditions must be reported. Using available emergency communications, notify concerned personnel of the hazard. Actions besides warning and reporting (and associated alarms and signals) include contamination marking and hazard prediction.

(1) Initial information on the type of incident and actual on-the-ground conditions must be received, analyzed, and disseminated. This information is crucial to support many key functions. Among these is deciding what areas should receive instructions on whether to evacuate or to seek shelter in place.

(2) Assessment-decision support tools may also help to identify possible locations of hazards at an incident site or locate populations within a community potentially affected by hazards. This information is intended to give an estimate of the

extent and location of the area that might be placed at risk by a particular HAZMAT release. Specifically, reference guides such as the Department of Transportation (DOT) 2000 North American Emergency Response Guidebook provides information on determining protection distances for TIC and select CW agents. This type of hazard analysis uses assessment-decision support tools to support maintaining improved situational awareness.

c. Containment. Response elements provide the capability to reduce or isolate an incident in order to mitigate or prevent further risk or damage to persons, materiel, facilities, and the environment. Contamination-control measures include leaving equipment in a contaminated area until it is monitored for contamination. Other contamination-control measures include encapsulating contaminated items by qualified personnel or covering the equipment with plastic bags or tarps.

(1) Survey elements will help ensure that the incident site is treated as a crime scene by setting boundaries and cordoning the site. Setting boundaries facilitates strict control into and out of the hot zone.

(2) DOD assets (in a CM role) will likely not have to conduct containment actions such as establishing control zones but may support verification of existing boundaries. Control zones are operational areas established at a WMD incident site within which only specific types of operations are conducted. Personnel working in these areas must adhere to strict procedures to ensure the safety of those working in the zones. Control zones are established to ensure the safety of all responders and control access into and out of a contaminated area. The three zones established at a WMD incident site are known as the hot zone, the warm zone, and the cold zone.

- Hot Zone. The hot zone is an area immediately surrounding an incident, which extends far enough to prevent adverse effects from the device/agent to personnel outside the zone. The hot zone can also be referred to as the exclusion zone (EZ), real zone, or restricted zone and is the primary area of contamination. The hot zone is the area that the incident commander judges to be the most affected by the incident. This includes any area to which the contaminant has spread or is likely to spread. Access is only permitted to personnel who are properly trained and protected. The incident commander sets the parameters of this zone after giving consideration to the type of agent, the volume released, the means of dissemination, the prevailing meteorological conditions, and the potential effects of local topography. ICS priorities within the hot zone may include conducting rescue and search, performing mitigation, and identifying WMD or other physical obstacles to the entry point. The hot zone is also the location where contamination reduction begins.

- Warm Zone. The warm zone (also known as either the decontamination zone or the contamination-reduction zone) is an area immediately surrounding the hot zone, which could become contaminated due to ongoing operations. The warm zone is the area between the hot and cold zones where personnel and equipment decontamination and hot-zone support take place. It includes control points for the access corridor and thus assists in reducing the spread of contamination. It is an operational area safe from downwind exposure and includes the bulk of the decontamination assets where survey-team and

equipment decontamination is accomplished. Access control points connecting the hot and cold zones are established. The warm zone can also be referred to as the contamination-reduction corridor, yellow zone, or limited access zone.

- Cold Zone. The cold zone, or the support zone (SZ), is the area outside the warm zone where there is no contamination present. The cold zone is the area where the CP and support functions that are necessary to control the incident are located. The same basic considerations that are used for the hot and warm zones influence the extent of the cold zone. The cold zone must be readily accessible and provide the means for safety and rest. It must also be large enough to accommodate local, state, and federal WMD response forces (if required) and to serve as the staging area for personnel and equipment. The operational priorities of the cold zone include providing C^2 for operations being conducted in the warm and hot zones and ensuring that there is an area of security for emergency personnel and response forces conducting operations. The cold zone can also be referred to as the clear zone, green zone, or SZ.

4. Summary

In summary, this phase of the operation involves a myriad of contamination-control measures. The follow-on critical actions that need to be quickly implemented include protection and decontamination. More detailed information is included on these topics in Appendices B and C.